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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,752	02/13/2004	Tsung-Yu Yu Kao	4444-0137P	5320

2292 7590 03/20/2007  
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FALLS CHURCH, VA 22040-0747

EXAMINER
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AFTERGUT, JEFF H

ART UNIT	PAPER NUMBER
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1733

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/20/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 03/20/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

## Office Action Summary

Application No.

10/777,752

Applicant(s)

YU KAO ET AL.

Examiner

Jeff H. Aftergut

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 2,5 and 11-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4 and 6-10 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1, 4, 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art (newly cited) in view of Inoue (newly cited), Lee et al (newly cited), and Niiya.

The applicant's admitted prior art suggested that it was known at the time the invention was made to manufacture a liquid crystal display which included the steps of providing a first glass substrate and forming a thin film transistor on the first glass substrate, see glass plate 12 and thin film transistor 13. The admitted prior art suggested that one would have formed a black matrix on the opposed substrate of glass 10 at 14. The color filter was likewise provided on the opposing substrate. A sealant was formed about the periphery of one of the glass plates (the reference to the admitted prior art does not specify which plate was provided with the sealant thereon). The admitted prior art suggested that an amount of liquid crystal material 18 was dropped on the substrate having the sealant thereon and the opposing glass substrates were brought together to form an assembly where the surfaces bearing the color filter and the thin film transistor (TFT) face one another. After assembly, the admitted prior art suggested that one would have cured the sealant via ultraviolet radiation from a side of the substrate bearing the color filter material thereon. The admitted prior art suggested the one drop fill method for forming the panel, however the admitted prior art taught that the black matrix material was provided on the glass surface which included the color

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filter thereon and not on the surface of the glass which included the thin film transistor (TFT). Additionally, there is no indication that the sealant material was applied to the glass substrate which did not include the TFT thereon and there is no express indication that the radiation would have been applied perpendicular to the surface of the substrate to cure the resin.

However, it was well recognized in the art to apply the black matrix material directly over the TFT assembly on a glass substrate (rather than having to align the color filter substrate with the TFT substrate in the assembly operation) in order to provide the TFT assembly with the requisite ultraviolet radiation protection to prevent degradation of the TFT as well as to simplify the panel formation by elimination of proper aligning steps and the need for spacers as taught by Inoue, see column 2, line 64-column 3, line 29, column 1, lines 56-67, for example. Clearly, one skilled in the art would have understood that the black matrix material would have been provided upon the TFT layer in order to impart light blocking characteristics on the TFT whereby a prevention of degradation in the properties of the TFT was achieved in the liquid crystal display panel therein. It should be noted that there is no indication from Inoue that application of the black matrix upon the TFT would have facilitated the curing of the sealant for the liquid crystal display.

The reference to Lee et al clearly suggested that those skilled in the art of manufacturing a liquid crystal display would have understood that curing of the sealant with ultraviolet curing rays would have understood that the radiation would have been applied through the glass substrate which did not bear the black matrix material thereon

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in order to directly irradiate the sealant. More specifically applicant is referred to column 8, lines 11-55 and note that the reference to Lee et al suggested that the black matrix material was possibly associated with the substrate bearing the TFT array. The reference clearly suggested that one skilled in the art would have exposed the assembly to radiation from the side which did not bear the black matrix material thereon and that such would have included application of radiation through the color filter substrate to set the sealing material as the black matrix material does not allow for radiant energy (UV) to pass there through. There is, nonetheless, no indication that one skilled in the art would have applied the sealant upon the substrate bearing the color filter thereon as the admitted prior art merely disclosed that the sealant material was provided for. One skilled in the art would have understood that the adhesive must be applied either to the color filter substrate or the TFT substrate in the joining operation.

Niiya suggested that one skilled in the art would have understood that the sealant material would have been applied to either the color filter substrate or the TFT substrate in the manufacture of a LCD. Applicant is referred to paragraph 3 of the Office action dated 9-25-06 for a complete discussion of Niiya. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the techniques of Inoue in the operation of the admitted prior art where the black matrix material was applied to the TFT substrate as such had the specified advantages identified by Inoue wherein one applied radiant energy through the color filter layer to cure the sealant as taught by Lee et al (as the black matrix material would not allow for the radiation to cure

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the sealant) and one applied the sealant upon the color filter layer substrate as evidenced by Niiya.

3. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above in paragraph 2 further taken with Park et al '365 for the same reasons as expressed in paragraph 4 of the Office action dated 9-15-06.

***Election/Restrictions***

4. Claims 2, 5, and 11-19 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention and species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 7-20-06.

***Allowable Subject Matter***

5. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

None of the prior art suggested that the color filters were formed on the first surface of the first glass substrate which already had the black matrix applied thereto and which additionally carried a thin film transistor thereon.

***Response to Arguments***

6. Applicant's arguments with respect to claims 1, 4, and 6-10 have been considered but are moot in view of the new ground(s) of rejection.

The formation of a thin film transistor on a glass substrate which also carried the black matrix material thereon was suggested by the reference to Inoue and Lee et al.

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Clearly inclusion of black matrix on the thin film transistor in a liquid crystal display device had advantages as identified above.

It should be noted that applicant did not dispute the teachings of Park et al '365 and therefore it is believed applicant agrees with the Office interpretation of the reference and the teachings therein of acrylic and epoxy acrylic sealant materials for LCDs. Likewise applicant did not find fault with the reasoning supplied with the Niiya reference that one skilled in the art would have understood that the sealant would have suitably been applied to either substrate in the process of making the LCD.

### ***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff H. Aftergut whose telephone number is 571-272-1212. The examiner can normally be reached on Monday-Friday 7:15-345 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Jeff H. Aftergut  
Primary Examiner  
Art Unit 1733

JHA  
March 14, 2007